1985 Index

How to Use the Index

In the Subject Index, pages 505-508; each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, page 508, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 509-511, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. Authors of Comments also are listed in the Author Index.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Calculation of Steady Flow About Propellers Using a Surface Panel Method **B85-081**
Three-Dimensional Viscous Flow Analysis for Centrifugal Impellers **B85-040**
Streamtube Expansion Effects on the Darrieus Wind Turbine **B85-023**
Two-Dimensional Viscous Simulation of Inlet/Diffuser Flows with Terminal Shocks **B85-016**
Computational Design and Validation Tests of Advanced-Concept Subsonic Inlets **B85-015**

Aeroelasticity

Vibration and Flutter of Mistuned Bladed-Disk Assemblies **B85-057**

Fuels and Fuel Systems

Aerodynamic Effect of Combustor Inlet Air Pressure on Fuel Jet Atomization **B85-021**
Fuel Distributions from Pressure-Swirl Atomizers **B85-002**

Noise

Calculation of Unsteady Fan Rotor Response Caused by Downstream Flow Distortions **B85-080**
Advanced Design Propeller Noise Testing in an Anechoic Chamber **B85-072**
Noise Testing of an Advanced Design Propeller in a Wind Tunnel **B85-065**
Predicted Changes in Advanced Turboprop Noise with Shaft Angle of Attack **B85-064**
Prediction of Broadband Noise from Horizontal Axis Wind Turbines **B85-047**

Performance

Performance Estimation for Turbofans with and without Mixers **B85-039**

Powerplant Design

Advanced Single-Rotation Propfan Drive System **B85-041**
Performance Estimation for Turbofans with and without Mixers **B85-039**
Reynolds Number and Fan/Inlet Coupling Effects on Subsonic Transport Inlet Distortion **B85-036**
Powerplants for Long-Duration Unmanned Aircraft **B85-019**
Drop-Size Distribution Characteristics of Spill-Return Atomizers **B85-003**

Propeller and Rotor Systems

Calculation of Steady Flow About Propellers Using a Surface Panel Method **B85-081**
Finite Difference Model for Vertical Axis Wind Turbines **B85-075**
Advanced Design Propeller Noise Testing in an Anechoic Chamber **B85-072**
Noise Testing of an Advanced Design Propeller in a Wind Tunnel **B85-065**
Predicted Changes in Advanced Turboprop Noise with Shaft Angle of Attack **B85-064**
Vibration and Flutter of Mistuned Bladed-Disk Assemblies **B85-057**
Advanced Single-Rotation Propfan Drive System **B85-041**

Simulation

Two-Dimensional Viscous Simulation of Inlet/Diffuser Flows with Terminal Shocks **B85-016**

Testing, Flight and Ground

Reynolds Number and Fan/Inlet Coupling Effects on Subsonic Transport Inlet Distortion **B85-036**

Vibration

Vibration and Flutter of Mistuned Bladed-Disk Assemblies **B85-057**

Energy

Alternate Fuels

Flame Radiation and Liner Heat Transfer in a Tubular-Can Combustor **B85-044**
Drop-Size Distribution Characteristics of Spill-Return Atomizers **B85-003**
Fuel Distributions from Pressure-Swirl Atomizers **B85-002**

Combustion

Use of Silane-Methane Mixtures for Scramjet Ignition **B85-067**
Calculation of a Hollow-Cone Liquid Spray in a Uniform Airstream **B85-061**
Internal Combustion Engine Combustion Chamber Process Studies at NASA Lewis Research Center **B85-059**
A Simplified Hydrocarbon Reaction Mechanism for Combustion Applications **B85-056**
Flame Radiation and Liner Heat Transfer in a Tubular-Can Combustor **B85-044**
Design and Performance Evaluation of a Two-Position Variable Geometry Turbofan Combustor **B85-030**
Drop-Size Distribution Characteristics of Spill-Return Atomizers **B85-003**
Fuel Distributions from Pressure-Swirl Atomizers **B85-002**

Hydrogen and Unique Fuels

Antiproton Annihilation Propulsion **B85-062**

Lasers

Criteria for the Evaluation of Laser Solar Energy Converter Systems **B85-070**

Magnetohydrodynamics

Dynamic Properties of Nonequilibrium Plasma in Disk MHD Generator **B85-074**
Fault Analysis of Midchannel Power Takeoff in Diagonal Conducting Wall Magnetohydrodynamic Generators **B85-068**
Power Generation Tests of the Improved Shaped B-Field-Type MHD Generator **B85-049**
Experimental Investigation of Subsonic Combustion-Driven MHD Generator Performance **B85-043**
Radiative Energy Loss and the Electrical Conductivity in Nonequilibrium MHD Generators **B85-026**
MHD Generator Performance Analyses for the Advanced Power Train Study **B85-014**

Reciprocating Machinery

Development of the Minimum-Friction Adiabatic Engine **B85-058**

A Limit to TDC Turbulence Intensity in Internal Combustion Engines B85-048

Rotating Machinery

Calculation of Unsteady Fan Rotor Response Caused by Downstream Flow Distortions B85-080
Multistage Compressor Stator/Rotor Interaction B85-078
Impact Bending of a Rotating, Rigid-Plastic Fan Blade B85-063
Simulation of Rotating Stall by the Vortex Method B85-037
Three-Dimensional Unsteady Flow in an Axial Flow Turbine B85-005

Wind Power

Finite Difference Model for Vertical Axis Wind Turbines B85-075
Prediction of Broadband Noise from Horizontal Axis Wind Turbines B85-047
Streamtube Expansion Effects on the Darrieus Wind Turbine B85-023

Fluid Dynamics

Aeroacoustics

Advanced Design Propeller Noise Testing in an Anechoic Chamber B85-072
Noise Testing of an Advanced Design Propeller in a Wind Tunnel B85-065
Prediction of Broadband Noise from Horizontal Axis Wind Turbines B85-047
Energy Balance Analysis of Nonlinear Combustion Instability B85-034

Boundary Layers and Convective Heat Transfer-Turbulent

Integral Analysis of Transonic Shock Wave/Boundary-Layer Interaction in Internal Flow B85-066
Heat Transfer in the Vicinity of a Large-Scale Obstruction in a Turbulent Boundary Layer B85-025

Computational Methods

Calculation of Steady Flow About Propellers Using a Surface Panel Method B85-081
Accurate and Efficient Solutions of Compressible Internal Flows B85-079
Finite Difference Model for Vertical Axis Wind Turbines B85-075
Calculation of a Hollow-Cone Liquid Spray in a Uniform Airstream B85-061
A Computational Study of the Unsteady Shock-Wave Structure in a Two-Dimensional Transonic Rotor B85-042
Three-Dimensional Viscous Flow Analysis for Centrifugal Impellers B85-040
Predicted Turbine Stage Performance Using Quasi-Three-Dimensional and Boundary-Layer Analyses B85-038
Simulation of Rotating Stall by the Vortex Method B85-037
CARS System for Turbulent Flame Measurements B85-033
Computational Design and Validation Tests of Advanced-Concept Subsonic Inlets B85-015
Approximate Factorization for Three-Dimensional Transonic Nacelle/Inlet Flowfield Computations B85-009

Hydrodynamics

Comparison of Design Techniques for Pumps with Skewed Blades B85-006

Jets, Wakes, and Viscid-Inviscid Flow Interactions

Solid Fuel Ramjet Simulator Results: Experiment and Analysis in Cold Flow B85-084
Multispark Flow Visualization of Lateral Jet Injection into a Swirling Cross Flow B85-083
Multistage Compressor Stator/Rotor Interaction B85-078
Simulation of Wake Passing in a Stationary Turbine Rotor Cascade B85-053
Three-Dimensional Unsteady Flow in an Axial Flow Turbine B85-005

Multiphase Flows

An Analysis of Pump Cavitation Damage B85-077
Calculation of a Hollow-Cone Liquid Spray in a Uniform Airstream B85-061
Aerodynamic Effect of Combustor Inlet Air Pressure on Fuel Jet Atomization B85-021

Nonsteady Aerodynamics

Calculation of Unsteady Fan Rotor Response Caused by Downstream Flow Distortions B85-080
The Annular Flow, Electrothermal Plug Ramjet B85-073
Internal Combustion Engine Combustion Chamber Process Studies at NASA Lewis Research Center B85-059
Computation of the Shuttle Solid Booster Nozzle Start-Up Transient Flow B85-055
Response of a Supersonic Inlet to Downstream Perturbations B85-018
Three-Dimensional Unsteady Flow in an Axial Flow Turbine B85-005

Nozzle and Channel Flow

Grain Deformation of Gas Flow Passages in Solid Rocket Motors B85-086
Accurate and Efficient Solutions of Compressible Internal Flows B85-079
The Annular Flow, Electrothermal Plug Ramjet B85-073
Computation of the Shuttle Solid Booster Nozzle Start-Up Transient Flow B85-055
Study of an Asymmetric Flap Nozzle as a Thrust-Vectoring Device B85-046
Analysis of Unsteady Inviscid Diffuser Flow with a Shock Wave B85-035
Spray Characteristics of Spill-Return Atomizers B85-032
Internal Flow Characteristics of Simplex Swirl Atomizers B85-031

Plasmadynamics and MHD

Dynamic Properties of Nonequilibrium Plasma in Disk MHD Generator B85-074
Fault Analysis of Midchannel Power Takeoff in Diagonal Conducting Wall Magnetohydrodynamic Generators B85-068
Experimental Investigation of Subsonic Combustion-Driven MHD Generator Performance B85-043
Radiative Energy Loss and the Electrical Conductivity in Nonequilibrium MHD Generators B85-026
MHD Generator Performance Analyses for the Advanced Power Train Study B85-014

Reactive Flows

Use of Silane-Methane Mixtures for Scramjet Ignition B85-067

Shock Waves and Detonations

Integral Analysis of Transonic Shock Wave/Boundary-Layer Interaction in Internal Flow B85-066

Subsonic Flow

Solid Fuel Ramjet Simulator Results: Experiment and Analysis in Cold Flow B85-084
Predicted Turbine Stage Performance Using Quasi-Three-Dimensional and Boundary-Layer Analyses B85-038
Experimental Study of Flows in a Two-Dimensional Inlet Model B85-017

Supersonic and Hypersonic Flow

External Compression Supersonic Inlet Analysis Using a Finite Difference Two-Dimensional Navier-Stokes Code B85-045

Transonic Flow

Integral Analysis of Transonic Shock Wave/Boundary-Layer Interaction in Internal Flow B85-066
Response of a Supersonic Inlet to Downstream Perturbations B85-018
Experimental Study of Flows in a Two-Dimensional Inlet Model B85-017
Approximate Factorization for Three-Dimensional Transonic Nacelle/Inlet Flowfield Computations B85-009

Viscous Nonboundary-Layer Flows

Computation of the Shuttle Solid Booster Nozzle Start-Up Transient Flow B85-055
A Limit to TDC Turbulence Intensity in Internal Combustion Engines B85-048

Wave Motion and Sloshing

Vortex Shedding Studies in a Simulated Coaxial Dump Combustor B85-071

Interdisciplinary Topics

Analytical and Numerical Methods

Fault Analysis of Midchannel Power Takeoff in Diagonal Conducting Wall Magnetohydrodynamic Generators B85-068
Predicted Changes in Advanced Turboprop Noise with Shaft Angle of Attack B85-064

Lasers and Laser Applications

Criteria for the Evaluation of Laser Solar Energy Converter Systems B85-070
CARS System for Turbulent Flame Measurements B85-033

Research Facilities and Instrumentation

Simulation of Wake Passing in a Stationary Turbine Rotor Cascade B85-053

Launch Vehicle and Missile (LV/M) Technology

Launch Vehicle Systems

Vertical Ascent from Earth to Geosynchronous Orbit B85-012

Mission Studies and Economics

Vertical Ascent from Earth to Geosynchronous Orbit B85-012

Propulsion and Propellant Systems

Grain Deformation of Gas Flow Passages in Solid Rocket Motors B85-086
An Analysis of Pump Cavitation Damage B85-077
High-Altitutde Simulation Tests of the LOX/LH_2 Engine LE-5 B85-029
Vertical Ascent from Earth to Geosynchronous Orbit B85-012

Marine Technology

Propulsion

Comparison of Design Techniques for Pumps with Skewed Blades B85-006

Propulsion

Airbreathing Propulsion

Solid Fuel Ramjet Simulator Results: Experiment and Analysis in Cold Flow B85-084
Multispark Flow Visualization of Lateral Jet Injection into a Swirling Cross Flow B85-083
A Linear Multivariable Dynamical Model of a Supersonic Inlet-Engine Combination B85-082
Accurate and Efficient Solutions of Compressible Internal Flows B85-079
Multistage Compressor Stator/Rotor Interaction B85-078
Counterrotating Intershaft Seals for Advanced Engines B85-076
Vortex Shedding Studies in a Simulated Coaxial Dump Combustor B85-071
Use of Silane-Methane Mixtures for Scramjet Ignition B85-067
Statistical Analysis Method for Prediction of Maximum Inlet Distortion B85-060
Internal Combustion Engine Combustion Chamber Process Studies at NASA Lewis Research Center B85-059
Development of the Minimum-Friction Adiabatic Engine B85-058
A Limit to TDC Turbulence Intensity in Internal Combustion Engines B85-048
External Compression Supersonic Inlet Analysis Using a Finite Difference Two-Dimensional Navier-Stokes Code B85-045
Advanced Single-Rotation Propfan Drive System B85-041
Three-Dimensional Viscous Flow Analysis for Centrifugal Impellers B85-040
Performance Estimation for Turbofans with and without Mixers B85-039
Analysis of Unsteady Inviscid Diffuser Flow with a Shock Wave B85-035
A Comparison of Scramjet Integral Analysis Techniques B85-024
Response of a Supersonic Inlet to Downstream Perturbations B85-018
Experimental Study of Flows in a Two-Dimensional Inlet Model B85-017
Computational Design and Validation Tests of Advanced-Concept Subsonic Inlets B85-015
Investigation of a Dual Inlet Side Dump Combustor Using Liquid Fuel Injection B85-013
Approximate Factorization for Three-Dimensional Transonic Nacelle/Inlet Flowfield Computations B85-009
Improved Supersonic Performance for the F-16 Inlet Modified for the J79 Engine B85-008
The Problem of Gradual Opening in Wave Rotor Passages B85-004

Combustion and Combustor Designs

Multispark Flow Visualization of Lateral Jet Injection into a Swirling Cross Flow B85-083
Design and Performance Evaluation of a Two-Position Variable Geometry Turbofan Combustor B85-030
Aerodynamic Effect of Combustor Inlet Air Pressure on Fuel Jet Atomization B85-021
Investigation of a Dual Inlet Side Dump Combustor Using Liquid Fuel Injection B85-013
A One-Dimensional Model of a Carbon-Black Slurry-Fueled Combustor B85-001

Combustion Stability, Ignition, and Detonation

Explosion Phenomenon from Contact of Hypergolic Liquids B85-052
Energy Balance Analysis of Nonlinear Combustion Instability B85-034
Design and Performance Evaluation of a Two-Position Variable Geometry Turbofan Combustor B85-030

Electric and Advanced Space Propulsion

The Annular Flow, Electrothermal Plug Ramjet B85-073
Antiproton Annihilation Propulsion B85-062
Pulsed Plasma Thrusters for Orbit Transfer B85-051
Ion Extraction Capabilities of Two-Grid Accelerator Systems B85-028
Power Supplies for Primary Electric Propulsion Missions B85-027
Antimatter Propulsion for OTV Applications B85-022
Design of a Nuclear Electric Propulsion Orbital Transfer Vehicle B85-011
Integratable Propulsion Systems for the Space Station B85-010

Engine Control

A Linear Multivariable Dynamical Model of a Supersonic Inlet-Engine Combination B85-082

Engine Performance

Predicted Turbine Stage Performance Using Quasi-Three-Dimensional and Boundary-Layer Analyses B85-038
Simulation of Rotating Stall by the Vortex Method B85-037
High-Altitutde Simulation Tests of the LOX/LH_2 Engine LE-5 B85-029
A Comparison of Scramjet Integral Analysis Techniques B85-024
Powerplants for Long-Duration Unmanned Aircraft B85-019
Two-Dimensional Viscous Simulation of Inlet/Diffuser Flows with Terminal Shocks B85-016

Environmental Effects

Impact Bending of a Rotating, Rigid-Plastic Fan Blade B85-063
Reynolds Number and Fan/Inlet Coupling Effects on Subsonic Transport Inlet Distortion B85-036

Fuels and Propellants, Properties of

Performance Parameters of Some New Hybrid Hypergols B85-087
Experimental Evaluation of As-Processed Propellant Grains B85-085
Determination of Thermal Transport Properties in Ammonium Perchlorate B85-069
Relations Among Ballistic Properties of Solid Propellants B85-054
Explosion Phenomenon from Contact of Hypergolic Liquids B85-052

Liquid Rocket Engines and Missile Systems

An Analysis of Pump Cavitation Damage B85-077
Explosion Phenomenon from Contact of Hypergolic Liquids B85-052
High-Altitutde Simulation Tests of the LOX/LH_2 Engine LE-5 B85-029

Nuclear Propulsion Systems

Antiproton Annihilation Propulsion B85-062
Powerplants for Long-Duration Unmanned Aircraft B85-019
Design of a Nuclear Electric Propulsion Orbital Transfer Vehicle B85-011

Propulsion for Marine Application

Comparison of Design Techniques for Pumps with Skewed Blades B85-006

Solid and Hybrid Rocket Engines

Performance Parameters of Some New Hybrid Hypergols B85-087
Grain Deformation of Gas Flow Passages in Solid Rocket Motors B85-086
Vortex Shedding Studies in a Simulated Coaxial Dump Combustor B85-071
Relations Among Ballistic Properties of Solid Propellants B85-054
Energy Balance Analysis of Nonlinear Combustion Instability B85-034

Spacecraft Technology

Electric Power

Power Supplies for Primary Electric Propulsion Missions B85-027

Mission Analysis

Pulsed Plasma Thrusters for Orbit Transfer B85-051
Power Supplies for Primary Electric Propulsion Missions B85-027

Propulsion Systems Integration

Pulsed Plasma Thrusters for Orbit Transfer B85-051
Design of a Nuclear Electric Propulsion Orbital Transfer Vehicle B85-011
Integratable Propulsion Systems for the Space Station B85-010

Structural Mechanics and Materials

Materials, Properties of

Experimental Evaluation of As-Processed Propellant Grains B85-085

Structural Composite Materials

Evaluation of Cumulative Damage Models for Fatigue Crack Growth in an Aircraft Engine Alloy B85-020

Structural Design

Combustion Related to Solid-Fuel Ramjets B85-088

Structural Durability (including Fatigue and Fracture)

Evaluation of Cumulative Damage Models for Fatigue Crack Growth in an Aircraft Engine Alloy B85-020

Structural Dynamics

Impact Bending of a Rotating, Rigid-Plastic Fan Blade B85-063

Thermophysics and Thermochemistry

Experimental Methods of Diagnostics

CARS System for Turbulent Flame Measurements B85-033
Probe-Shift Error in Remote Diagnostic of Volume Radiation Sources B85-007

Heat Conduction

Determination of Thermal Transport Properties in Ammonium Perchlorate B85-069

Radiation and Radiative Heat Transfer

Flame Radiation and Liner Heat Transfer in a Tubular-Can Combustor B85-044
Probe-Shift Error in Remote Diagnostic of Volume Radiation Sources B85-007

Thermochemistry and Chemical Kinetics

Performance Parameters of Some New Hybrid Hypergols B85-087

A Simplified Hydrocarbon Reaction Mechanism for Combustion Applications B85-056
Invariant Kinetic Parameters of Polybutadiene Binders Thermal Decomposition B85-050
A Comparison of Scramjet Integral Analysis Techniques B85-024

Thermophysical Properties of Matter

Determination of Thermal Transport Properties in Ammonium Perchlorate B85-069

Author Index

Anderson, R. D., B85-041
Antcliff, R. R., B85-033
Aoki, K., B85-083
Atta, E. H., B85-009
Barber, T. J., B85-015
Beguier, C., B85-023
Billet, M. L., B85-077
Blair, M. F., B85-025
Block, P. J. W., B85-064
Bogar, T. J., B85-017, B85-018
Boretz, J. E., B85-019
Boyle, R. J., B85-038
Bracco, F. V., B85-048
Brooks, W. T., B85-054
Brophy, M. C., B85-077
Brown, R. S., B85-071
Bryzik, W., B85-058
Buden, D., B85-011
Butler, T. L., B85-005
Campbell, A. F., B85-045
Cassenti, B. N., B85-022
Cawthon, J. A., B85-008
Childs, M. E., B85-066
Choudhury, P. R., B85-067
Chow, W. L., B85-046
Christoff, J. R., B85-020
Claus, R. W., B85-044
Cline, M. C., B85-055
Coleman, E. B., B85-030
Craig, R. R., B85-013
Cremers, C. J., B85-007
Culick, F. E. C., B85-035
Dadone, A., B85-079
Daimon, W., B85-052
Davis, F. G., B85-030
de Groot, W. A., B85-084
Delaney, R. A., B85-040
Devlin, R. E., B85-041
Doorly, D. J., B85-053
Dring, R. P., B85-005
Dunlap, R., B85-071
Eidelman, S., B85-004
Faeth, G. M., B85-001
Fanucci, J. B., B85-075
Ferrell, G. B., B85-083
Flandro, G. A., B85-034
Forester, C. K., B85-045
Forward, R., B85-062
Fraunie, P., B85-023
Frisch, S. R., B85-058
Fujita, T., B85-029
Gamble, W. L., B85-076
Garrison, P. W., B85-010, B85-011
Gerstein, M., B85-067
Glick, R. L., B85-054
Glover, B. M., Jr., B85-065
Gowda, G. P., B85-026
Grosveld, F. W., B85-047
Guan, Y., B85-082
Gupta, G. P., B85-026
Haas, J. E., B85-038
Hals, F. A., B85-014
Haritos, G. K., B85-020
Harries, W. L., B85-070
Hathaway, M. D., B85-078
Hayder, M. E., B85-048
Hess, J. L., B85-081
Hubbartt, J. E., B85-084
Humenik, F. M., B85-044
Hunter, L. G., B85-008
Ingebo, R. D., B85-021
Ishikawa, M., B85-068
Ives, D. C., B85-015
Jachimowski, C. J., B85-056
Jagoda, J. I., B85-084
Jain, S. R., B85-087
Jarrett, O., Jr., B85-033
Johnson, K. P., B85-030
Jones, R. M., B85-027
Joslyn, H. D., B85-005
Judd, D. C., B85-010
Kabashima, S., B85-074
Katsanis, T., B85-038
Kayukawa, N., B85-049
Kaza, K. R. V., B85-057
Kessler, R., B85-043
Kielb, R. E., B85-057
Kimura, I., B85-052
Kishimoto, K., B85-029
Kroutil, J. C., B85-017, B85-018
Kubo, I., B85-058
Kumar, A., B85-016
Landuk, L. G., B85-085
Lefebvre, A. H., B85-002, B85-003, B85-031, B85-032
Lesnikovich, A. I., B85-050
Levchik, S. V., B85-050
Lilley, D. G., B85-083
Marathe, A. G., B85-088
Martin, J. A., B85-012
McClaine, A. W., B85-043
McKain, T. F., B85-040
McManus, K. R., B85-061
Messner, A. M., B85-086
Miller, R., B85-015
Mitchell, C. E., B85-073
Mittal M. L., B85-026
Miyajima, H., B85-029
Motycka, D. L., B85-036
Napolitano, M., B85-079
Neely, G. M., B85-044
Nelson, D. P., B85-015
Ng, W., B85-080
Nicholas, T., B85-020
Novick, A. S., B85-041
Oates, G. C., B85-039
O'Brien, W. F., B85-080
Okiishi, T. H., B85-078
Oldfield, M. L. G., B85-053
Om, D., B85-066
Ortman, J., B85-002
Padula, S. L., B85-064
Paraschivoiu, I., B85-023
Pian, C. C. P., B85-014
Plunkett, E. I., B85-065, B85-072
Raghunandan, B. N., B85-088
Rajagopalan, R. G., B85-075
Rajendran, G., B85-087
Ravichandran, E. R., B85-088
Rhie, C. M., B85-040
Richardson, J., B85-084
Richardson, S. M., B85-080
Rizk, N. K., B85-003, B85-031, B85-032
Rogers, R. C., B85-033
Rohatgi, V. K., B85-026
Rosenberg, S. D., B85-010
Rovang, D. C., B85-028
Sajben, M., B85-017, B85-018
Sanborn, J. W., B85-030
Scheihing, P. E., B85-030
Schock, H. J., B85-059
Scott-Monck, J. A., B85-027
Scott, M. H., B85-068
Sedlock, D., B85-060
Sharma, O. P., B85-005
Shaw, B. D., B85-073
Shioda, S., B85-074
Shioya, T., B85-063
Simcox, C. D., B85-065, B85-072
Smith, F. E., B85-006
Spalart, P. R., B85-037
Sparis, P. D., B85-042
Stark, J. A., B85-069
Stinebring, D. R., B85-077
Strahle, W. C., B85-084
Streby, G. D., B85-013
Stronge, W. J., B85-063
Stull, F. D., B85-013
Sturgess, G. J., B85-061
Sullins, G. A., B85-024
Svob, G. J., B85-085
Swaith, P. S., B85-007
Swallom, D. W., B85-043
Syberg, J., B85-045
Syed, S. A., B85-061
Talcott, N. A., Jr., B85-016
Tanaka, M., B85-052
Taylor, R. E., B85-069
Topness, P. C., B85-072
Treaster, A. L., B85-006
Turchi, P. J., B85-051
Turns, S. R., B85-001
Tweedt, D. L., B85-078
Vadyak, J., B85-009
Valarezo, W. O., B85-081
Vanka, S. P., B85-013
Varma, A. K., B85-048
Veit, P. W., B85-085
Wagner, D. A., B85-041
Walterick, R. E., B85-084
Waltrup, P. J., B85-024
Waugh, R. C., B85-071
Wilbur, P. J., B85-028, B85-073
Wilmoth, R. G., B85-055
Wu, C. C., B85-046
Wu, Y. C. L., B85-068
Yamasaki, H., B85-074
Yanagawa, K., B85-029
Yang, V., B85-035
Yarng, J., B85-082
Yarng, S., B85-082
Yoshikawa, Y., B85-074
Young, S. W., B85-071

Chronological Index

B85-001 A One-Dimensional Model of a Carbon-Black Slurry-Fueled Combustor. S. R. Turns and G. M. Faeth, *The Pennsylvania State University* (1, 1, p. 5) Article based on AIAA Paper 84-0126

B85-002 Fuel Distributions from Pressure-Swirl Atomizers. J. Ortman and A. H. Lefebvre, *Purdue University* (1, 1, p. 11) Article

B85-003 Drop-Size Distribution Characteristics of Spill-Return Atomizers. N. K. Rizk and A. H. Lefebvre, *Purdue University* (1, 1, p. 16) Article based on AIAA Paper 84-1321

B85-004 The Problem of Gradual Opening in Wave Rotor Passages. S. Eidelman, *Naval Postgraduate School* (1, 1, p. 23) Article

B85-005 Three-Dimensional Unsteady Flow in an Axial Flow Turbine. O. P. Sharma and T. L. Butler, *Pratt & Whitney-Engineering Division*; H. D. Joslyn and R. P. Dring, *United Technologies Research Center* (1, 1, p. 29) Article based on AIAA Paper 83-1170

B85-006 Comparison of Design Techniques for Pumps with Skewed Blades. A. L. Treaster and F. E. Smith, *Pennsylvania State University* (1, 1, p. 39) Article based on AIAA Paper 83-1282

B85-007 Probe-Shift Error in Remote Diagnostic of Volume-Radiation Sources. C. J. Cremers and P. S. Swaith, *University of Kentucky* (1, 1, p. 45) Article based on AIAA Paper 83-1541

B85-008 Improved Supersonic Performance for the F-16 Inlet Modified for the J79 Engine. Louis G. Hunter and J. A. Cawthon, *General Dynamics Corporation* (1, 1, p. 50) Article based on AIAA Paper 84-1272

B85-009 Approximate Factorization for Three-Dimensional Transonic Nacelle/Inlet Flowfield Computations. Joseph Vadyak and Essam H. Atta, *Lockheed-Georgia Company* (1, 1, p. 58) Article based on AIAA Paper 83-1417

B85-010 Integratable Propulsion Systems for the Space Station. S. D. Rosenberg and D. C. Judd, *Aerojet TechSystems Company*; and P. W. Garrison, *Jet Propulsion Laboratory, California Institute of Technology* (1, 1, p. 65) Article

B85-011 Design of a Nuclear Electric Propulsion Orbital Transfer Vehicle. David Buden, *Los Alamos National Laboratory*; and Philip W. Garrison, *Jet Propulsion Laboratory, California Institute of Technology* (1, 1, p. 70) Article based on AIAA Paper 84-1447

B85-012 Vertical Ascent from Earth to Geosynchronous Orbit. James A. Martin, *NASA Langley Research Center* (1, 1, p. 77) Article based on AIAA Paper 84-0509

B85-013 Investigation of a Dual Inlet Side Dump Combustor Using Liquid Fuel Injection. F. D. Stull and R. R. Craig, *Air Force Wright Aeronautical Laboratories*; G. D. Streby, *Universal Energy System*; and S. P. Vanka, *Argonne National Laboratories* (1, 1, p. 83) Article based on AIAA Paper 83-0420

B85-014 MHD Generator Performance Analyses for the Advanced Power Train Study. Carlson C. P. Pian and Finn A. Hals, *Avco Everett Research Laboratory, Inc.* (1, 1, p. 89) Article based on AIAA Paper 84-0154

B85-015 Computational Design and Validation Tests of Advanced-Concept Subsonic Inlets. T. J. Barber, *United Technologies Research Center*; D. C. Ives, D. P. Nelson and R. Miller, *Pratt & Whitney Aircraft Group* (1, 2, p. 97) Article based on AIAA Paper 84-1329

B85-016 Two-Dimensional Viscous Simulation of Inlet/Diffuser Flows with Terminal Shocks. Noel A. Talcott Jr. and Ajay Kumar, *NASA Langley Research Center* (1, 2, p. 103) Article based on AIAA Paper 84-1362

B85-017 Experimental Study of Flows in a Two-Dimensional Inlet Model. Miklos Sajben, Thomas J. Bogar and Joseph C. Kroutil, *McDonnell Douglas Corporation* (1, 2, p. 109) Article based on AIAA Paper 83-0176

B85-018 Response of a Supersonic Inlet to Downstream Perturbations. T. J. Bogar, M. Sajben and J. C. Kroutil, *McDonnell Douglas Corporation* (1, 2, p. 118) Article

B85-019 Powerplants for Long-Duration Unmanned Aircraft. J. E. Boretz, *TRW Applied Technology Division* (1, 2, p. 126) Article based on AIAA Paper 84-1431

B85-020 Evaluation of Cumulative Damage Models for Fatigue Crack Growth in an Aircraft Engine Alloy. T. Nicholas, *Air Force Wright Aeronautical Laboratories*; G. K. Haritos, *Air Force Institute of Technology*; and J. R. Christoff, *Air Force Armament Laboratory* (1, 2, p. 131) Article

B85-021 Aerodynamic Effect of Combustor Inlet Air Pressure on Fuel Jet Atomization. Robert D. Ingebo, *NASA Lewis Research Center* (1, 2, p. 137) Article based on AIAA Paper 84-1320

B85-022 Antimatter Propulsion for OTV Applications. Brice N. Cassenti, *United Technologies Research Center* (1, 2, p. 143) Article based on AIAA Paper 84-1485

B85-023 Streamtube Expansion Effects on the Darrieus Wind Turbine. Ion Paraschivoiu, *Ecole Polytechnique de Montreal (Canada)*; Philippe Fraunie and Claude Beguier, *Institut de Mecanique Statistique de la Turbulence (France)* (1, 2, p. 150) Article

B85-024 A Comparison of Scramjet Integral Analysis Techniques. G. A. Sullins and P. J. Waltrup, *The John Hopkins University Applied Physics Laboratory* (1, 2, p. 156) Technical Note

B85-025 Heat Transfer in the Vicinity of a Large-Scale Obstruction in a Turbulent Boundary Layer. M. F. Blair, *United Technologies Research Center* (1, 2, p. 158) Technical Note based on AIAA Paper 84-1723

B85-026 Radiative Energy Loss and the Electrical Conductivity in Nonequilibrium MHD Generators. G. P. Gupta and V. K. Rohatgi, *Bhabha Atomic Research Center (India)*; G. Paran Gowda and Mittal M. L., *Indian Institute of Technology (India)* (1, 3, p. 161) Synoptic

B85-027 Power Supplies for Primary Electric Propulsion Missions. Ross M. Jones and John A. Scott-Monck, *Jet Propulsion Laboratory, California Institute of Technology* (1, 3, p. 163) Article

B85-028 Ion Extraction Capabilities of Two-Grid Accelerator Systems. Dean C. Rovang and Paul J. Wilbur, *Colorado State University* (1, 3, p. 172) Article

B85-029 High-Altitutde Simulation Tests of the LOX/LH_2 Engine LE-5. Koji Yanagawa, *National Space Development Agency of Japan*; Hiroshi Miyajima, *National Aerospace Laboratory (Japan)*; Kenji Kishimoto, *Mitsubishi Heavy Industries Ltd. (Japan)*; and Toshihiko Fujita, *National Space Development Agency of Japan* (1, 3, p. 180) Article

B85-030 Design and Performance Evaluation of a Two-Position Variable Geometry Turbofan Combustor. J. W. Sanborn, P. E. Scheihing, E. B. Coleman, K. P. Johnson and F. G. Davis, *Garrett Turbine Engine Company* (1, 3, p. 187) Article based on AIAA Paper 84-1171

B85-031 Internal Flow Characteristics of Simplex Swirl Atomizers. N. K. Rizk and A. H. Lefebvre, *Purdue University* (1, 3, p. 193) Article

B85-032 Spray Characteristics of Spill-Return Atomizers. N. K. Rizk and A. H. Lefebvre, *Purdue University* (1, 3, p. 200) Article

B85-033 CARS System for Turbulent Flame Measurements. Richard R. Antcliff, *Systems Research Laboratories, Inc.*; Olin Jarrett Jr. and R. Clayton Rogers, *NASA Langley Research Center* (1, 3, p. 205) Article based on AIAA Paper 84-1537

B85-034 Energy Balance Analysis of Nonlinear Combustion Instability. G. A. Flandro, *University of Utah* (1, 3, p. 210) Article

B85-035 Analysis of Unsteady Inviscid Diffuser Flow with a Shock Wave. V. Yang and F. E. C. Culick, *California Institute of Technology* (1, 3, p. 222) Article

B85-036 Reynolds Number and Fan/Inlet Coupling Effects on Subsonic Transport Inlet Distortion. D. L. Motycka, *Pratt & Whitney Aircraft Group* (1, 3, p. 229) Article based on AIAA Paper 84-2487

B85-037 Simulation of Rotating Stall by the Vortex Method. Philippe, R. Spalart, *NASA Ames Research Center* (1, 3, p. 235) Article

B85-038 Predicted Turbine Stage Performance Using Quasi-Three-Dimensional and Boundary-Layer Analyses. Robert J. Boyle, Jeffrey E. Haas and Theodore Katsanis, *NASA Lewis Research Center* (1, 3, p. 242) Article

B85-039 Performance Estimation for Turbofans with and without Mixers. Gordon C. Oates, *University of Washington* (1, 3, p. 252) Article

B85-040 Three-Dimensional Viscous Flow Analysis for Centrifugal Impellers. C. M. Rhie, R. A. Delaney and T. F. McKain, *General Motors Corporation* (1, 4, p. 257) Synoptic based on AIAA Paper 84-1296

B85-041 Advanced Single-Rotation Propfan Drive System. R. D. Anderson, R. E. Devlin, A. S. Novick and D. A. Wagner, *Allison Gas Turbine Division, General Motors Corporation* (1, 4, p. 259) Synoptic based on AIAA Paper 84-1194

B85-042 A Computational Study of the Unsteady Shock-Wave Structure in a Two-Dimensional Transonic Rotor. Panagiotis Demetriou Sparis, *Democritus University of Thrace (Greece)* (1, 4, p. 261) Synoptic

B85-043 Experimental Investigation of Subsonic Combustion-Driven MHD Generator Performance. A. W. McClaine, D. W. Swallom and R. Kessler, *Avco Everett Research Laboratory* (1, 4, p. 263) Article based on AIAA Paper 84-0157

B85-044 Flame Radiation and Liner Heat Transfer in a Tubular-Can Combustor. R. W. Claus, G. M. Neely and F. M. Humenik, *NASA Lewis Research Center* (1, 4, p. 270) Article based on AIAA Paper 84-0443

B85-045 External Compression Supersonic Inlet Analysis Using a Finite Difference Two-Dimensional Navier-Stokes Code. A. F. Campbell, J. Syberg and C. K. Forester, *Boeing Military Airplane Company* (1, 4, p. 279) Article based on AIAA Paper 84-1275

B85-046 Study of an Asymmetric Flap Nozzle as a Thrust-Vectoring Device. C. C. Wu, *California State University, Los Angeles*; and W. L. Chow, *University of Illinois* (1, 4, p. 286) Article based on AIAA Paper 84-1360

B85-047 Prediction of Broadband Noise from Horizontal Axis Wind Turbines. Ferdinand W. Grosveld, *The Bionetics Corporation* (1, 4, p. 292) Article based on AIAA Paper 84-2357

B85-048 A Limit to TDC Turbulence Intensity in Internal Combustion Engines. M. E. Hayder, A. K. Varma and F. V. Bracco, *Princeton University* (1, 4, p. 300) Article

B85-049 Power Generation Tests of the Improved Shaped B-Field-Type MHD Generator. Naoyuki Kayukawa, *Hokkaido University (Japan)* (1, 4, p. 309) Technical Note

B85-050 Invariant Kinetic Parameters of Polybutadiene Binders Thermal Decomposition. Anatolii I. Lesnikovich and Sergei V. Levchik, *Byelorussian State University (USSR)* (1, 4, p. 311) Technical Note

B85-051 Pulsed Plasma Thrusters for Orbit Transfer. P. J. Turchi, *R&D Associates, Washington Research Laboratory* (1, 4, p. 313) Technical Note

B85-052 Explosion Phenomenon from Contact of Hypergolic Liquids. Masafumi Tanaka, Wataru Daimon and Itsuro Kimura, *University of Tokyo* (1, 4, p. 314) Technical Note

B85-053 Simulation of Wake Passing in a Stationary Turbine Rotor Cascade. D. J. Doorly and M. L. G. Oldfield, *University of Oxford (England)* (1, 4, p. 316) Technical Note

B85-054 Relations Among Ballistic Properties of Solid Propellants. R. L. Glick, *Purdue University*; and W. T. Brooks, *Hercules, Inc.* (1, 4, p. 319) Technical Note

B85-055 Computation of the Shuttle Solid Booster Nozzle Start-Up Transient Flow. Michael C. Cline, *Los Alamos National Laboratory*; and Richard G. Wilmoth, *NASA Langley Research Center* (1, 5, p. 321) Article based on AIAA Paper 84-0462

B85-056 A Simplified Hydrocarbon Reaction Mechanism for Combustion Applications. Casimir J. Jachimowski, *NASA Langley Research Center* (1, 5, p. 329) Article

B85-057 Vibration and Flutter of Mistuned Bladed-Disk Assemblies. Krishna Rao V. Kaza and Robert E. Kielb, *NASA Lewis Research Center* (1, 5, p. 336) Article based on AIAA Paper 84-0991 CP844

B85-058 Development of the Minimum-Friction Adiabatic Engine. I. Kubo and S. R. Frisch, *Cummins Engine Company, Inc.*; and W. Bryzik, *U. S. Army Tank-Automative Command* (1, 5, p. 345) Article based on AIAA Paper 84-1396

B85-059 Internal Combustion Engine Combustion Chamber Process Studies at NASA Lewis Research Center. Harold J. Schock, *NASA Lewis Research Center* (**1**, 5, p. 351) Article based on AIAA Paper 84-1316

B85-060 Statistical Analysis Method for Prediction of Maximum Inlet Distortion. Dennis Sedlock, *Air Force Wright Aeronautical Laboratories, Wright-Patterson Air Force Base* (**1**, 5, p. 354) Article based on AIAA Paper 84-1274

B85-061 Calculation of a Hollow-Cone Liquid Spray in a Uniform Airstream. G. J. Sturgess, S. A. Syed and K. R. McManus, *United Technologies Corporation* (**1**, 5, p. 360) Article based on AIAA Paper 84-1322

B85-062 Antiproton Annihilation Propulsion. Robert Forward, *Hughes Research Laboratories* (**1**, 5, p. 370) Article based on AIAA Paper 84-1482

B85-063 Impact Bending of a Rotating, Rigid-Plastic Fan Blade. Tadashi Shioya, *University of Tokyo*; and William James Stronge, *University of Cambridge* (**1**, 5, p. 375) Article

B85-064 Predicted Changes in Advanced Turboprop Noise with Shaft Angle of Attack. S. L. Padula and P. J. W. Block, *NASA Langley Research Center* (**1**, 5, p. 381) Article based on AIAA Paper 84-2347

B85-065 Noise Testing of an Advanced Design Propeller in a Wind Tunnel. B. M. Glover Jr., E. I. Plunkett and C. D. Simcox, *Boeing Commercial Airplane Company* (**1**, 5, p. 388) Article based on AIAA Paper 84-2366

B85-066 Integral Analysis of Transonic Shock Wave/Boundary-Layer Interaction in Internal Flow. Deepak Om and Morris E. Childs, *University of Washington* (**1**, 5, p. 393) Article based on AIAA Paper 83-1402

B85-067 Use of Silane-Methane Mixtures for Scramjet Ignition. M. Gerstein and P. R. Choudhury, *University of Southern California* (**1**, 5, p. 399) Article

B85-068 Fault Analysis of Midchannel Power Takeoff in Diagonal Conducting Wall Magnetohydrodynamic Generators. Motoo Ishikawa, *Kyoto University (Japan)*; Y. C. L. Wu and M. H. Scott, *The University of Tennessee Space Institute* (**1**, 5, p. 403) Article based on AIAA Paper 82-0922

B85-069 Determination of Thermal Transport Properties in Ammonium Perchlorate. John A. Stark and R. E. Taylor, *Purdue University* (**1**, 5, p. 409) Technical Note

B85-070 Criteria for the Evaluation of Laser Solar Energy Converter Systems. W. L. Harries, *Old Dominion University* (**1**, 5, p. 411) Technical Note

B85-071 Vortex Shedding Studies in a Simulated Coaxial Dump Combustor. R. S. Brown, R. Dunlap, S. W. Young and R. C. Waugh, *United Technologies* (**1**, 5, p. 413) Technical Note *Propulsion Company*; and G. J. Svob, *Aerojet Tactical Systems Company* (**1**, 6, p. 494) Article based on AIAA Paper 84-1293

B85-086 Grain Deformation of Gas Flow Passages in Solid Rocket Motors. Adrian M. Messner, *General Dynamics Pomona Division* (**1**, 6, p. 498) Technical Note

B85-087 Performance Parameters of Some New Hybrid Hypergols. S. R. Jain and G. Rajendran, *Indian Institute of Science* (**1**, 6, p. 500) Technical Note

B85-088 Combustion Related to Solid-Fuel Ramjets. B. N. Raghunandan, E. R. Ravichandran and A. G. Marathe, *Indian Institute of Science* (**1**, 6, p. 502) Technical Note

B85-072 Advanced Design Propeller Noise Testing in an Anechoic Chamber. E. I. Plunkett and P. C. Topness, *Boeing Commercial Airplane Company*; and C. D. Simcox, *Boeing Commerical Airplane Company* (**1**, 5, p. 415) Technical Note based on AIAA Paper 84-2262

B85-073 The Annular Flow, Electrothermal Plug Ramjet. B. D. Shaw, C. E. Mitchell and P. J. Wilbur, *Colorado State University* (**1**, 6, p. 417) Article

B85-074 Dynamic Properties of Nonequilibrium Plasma in Disk MHD Generator. Y. Yoshikawa, S. Kabashima, H. Yamasaki and S. Shioda, *Tokyo Institute of Technology* (**1**, 6, p. 425) Article

B85-075 Finite Difference Model for Vertical Axis Wind Turbines. R. Ganesh Rajagopalan, *Iowa State University*; and Jerome B. Fanucci, *West Virginia Univerisity* (**1**, 6, p. 432) Article

B85-076 Counterrotating Intershaft Seals for Advanced Engines. W. L. Gamble, *Pratt & Whitney* (**1**, 6, p. 437) Article based on AIAA Paper 84-1216

B85-077 An Analysis of Pump Cavitation Damage. Michael C. Brophy, David R. Stinebring and Michael L. Billet, *The Pennsylvania State University* (**1**, 6, p. 441) Article

B85-078 Multistage Compressor Stator/Rotor Interaction. Daniel L. Tweedt, *Iowa State University*; Michael D. Hathaway, *U. S. Army Research and Technology Laboratories*; and Theodore H. Okiishi, *Iowa State University* (**1**, 6, p. 449) Article based on AIAA Paper 85-0009

B85-079 Accurate and Efficient Solutions of Compressible Internal Flows. A. Dadone and M. Napolitano, *Universita degli studi di Bari* (**1**, 6, p. 456) Article based on AIAA Paper 84-1247

B85-080 Calculation of Unsteady Fan Rotor Response Caused by Downstream Flow Distortions. Walter F. O'Brien, Wing-fai Ng and Scott M. Richardson, *Virginia Polytechnic Institute and State University* (**1**, 6, p. 464) Article based on AIAA Paper 84-2282

B85-081 Calculation of Steady Flow About Propellers Using a Surface Panel Method. John L. Hess and Walter O. Valarezo, *Douglas Aircraft Company* (**1**, 6, p. 470) Article based on AIAA Paper 85-0283

B85-082 A Linear Multivariable Dynamical Model of a Supersonic Inlet-Engine Combination. Yanchen Guan, Shin Yarng and Jiahnbo Yarng, *Northwestern Polytechnical University (China)* (**1**, 6, p. 477) Article based on AIAA Paper 84-1496

B85-083 Multispark Flow Visualization of Lateral Jet Injection into a Swirling Cross Flow. G. B. Ferrell, K. Aoki and D. G. Lilley, *Oklahoma State University* (**1**, 6, p. 485) Article based on AIAA Paper 85-0059

B85-084 Solid Fuel Ramjet Simulator Results: Experiment and Analysis in Cold Flow. J. Richardson, W. A. de Groot, J. I. Jagoda, R. E. Walterick, J. E. Hubbartt and W. C. Strahle, *Georgia Institute of Technology* (**1**, 6, p. 488) Article based on AIAA Paper 85-0329

B85-085 Experimental Evaluation of As-Processed Propellant Grains. P. W. Veit and L. G. Landuk, *Aerojet Strategic*